

IN THE CLAIMS:

1. (Currently Amended) A respiratory delivery system for at least assisting in introducing a ~~first~~-substance to pulmonary tissue, wherein said respiratory delivery system comprises:

5 at least one airflow inlet;

at least one outlet;

at least one airflow passage extending between said at least one airflow inlet and said at least one outlet;

at least one ejection actuator; and

10 at least one airflow regulation assembly adapted to ~~sizably~~-adjust a size of a passage through which airflow is directed to achieve ~~an~~ a substantially constant airflow rate through said passage that is substantially independent of a magnitude of an inhalation.

2. (Original) A respiratory delivery system, as claimed in Claim 1, wherein said respiratory delivery system is selected from the group consisting essentially of oral and nasal
15 inhalers.

3. (Original) A respiratory delivery system, as claimed in Claim 1, wherein said ~~first~~-substance is selected from the group consisting essentially of liquid medicament and powdered medicament.

4. (Original) A respiratory delivery system, as claimed in Claim 1, wherein said
20 at least one said ejection actuator is adapted to at least assist in discharging said ~~first~~-substance into said airflow.

5. (Original) A respiratory delivery system, as claimed in Claim 1, wherein said at least one said ejection actuator comprises multiple said ejection actuators.

6. (Original) A respiratory delivery system, as claimed in Claim 1, wherein each said ejection actuator is independently actuatable.

7. (Withdrawn). A respiratory delivery system, as claimed in Claim 1, wherein said at least one said ejection actuator comprises first and second groups of said ejection actuators, wherein each of said first and second groups comprises a plurality said ejection actuators, and wherein said first group is independently actuatable with respect to said second group.

8. (Currently Amended) A respiratory delivery system, as claimed in Claim 1, wherein said at least one said airflow regulation ~~system~~assembly is disposed at or near said at least one said airflow inlet ~~of said airflow conduit~~.

9. (Currently Amended) A respiratory delivery system, as claimed in Claim 1, wherein said ~~at least one said airflow~~ passage comprises a flow regulation port, wherein a first inner diameter of said flow regulation port disposed toward said at least one said airflow inlet is larger than a second inner diameter of said flow regulation port disposed toward said at least one said outlet.

10. (Currently Amended) A respiratory delivery system, as claimed in Claim ~~4~~9, wherein side walls of said ~~at least one said airflow passage~~ flow regulation port linearly converge in a direction of said airflow toward said at least one said outlet.

11. (Original) A respiratory delivery system, as claimed in Claim 10, wherein each said airflow regulation assembly comprises a baffle comprising first and second major surfaces disposed substantially perpendicularly to a direction of said airflow and an outer periphery, wherein said outer periphery of said baffle is separated from said side walls by a first distance when said baffle is in a first position disposed toward said at least one said airflow inlet, and wherein said outer periphery of said baffle is separated from said side walls by a second distance less than said first distance when said baffle in a second position disposed toward said at least one said outlet.

12. (Original) A respiratory delivery system, as claimed in Claim 1, wherein each said airflow regulation assembly comprises a baffle comprising first and second major surfaces disposed substantially perpendicularly to a direction of said airflow.

13. (Original) A respiratory delivery system, as claimed in Claim 12, wherein a first position of said baffle in response to a first inhalation force is defined by said baffle being separated from said at least one said outlet by a first distance, and wherein a second position of said baffle in response to a second inhalation force greater than said first inhalation force is defined by said baffle being separated from said at least one said outlet by a second distance less than said first distance.

14. (Currently Amended) A respiratory delivery system, as claimed in Claim 12, wherein a first position of said baffle in response to a first inhalation force is defined by said baffle being separated from said at least one airflow inlet by a first distance, and wherein a second position of said baffle in response to a second inhalation force greater than said first inhalation force is defined by said baffle being separated from said at least one said airflow inlet by a second distance greater than said first distance.

15. (Original) A respiratory delivery system, as claimed in Claim 12, wherein said baffle avoids inhibition of said airflow in a first position disposed toward said at least one said airflow inlet, and wherein said baffle at least partially inhibits said airflow in a second position disposed toward said at least one said outlet.

16. (Original) A respiratory delivery system, as claimed in Claim 12, wherein said baffle is free of holes.

17. (Original) A respiratory delivery system, as claimed in Claim 12, wherein each said airflow regulation assembly comprises a biasing member comprising first and second ends,

wherein said first end is disposed in contact with said baffle, wherein said second end is disposed in a fixed position relative to said at least one said airflow passage, and wherein said biasing member exerts a biasing force on said baffle in a substantially opposite direction of a direction of said airflow.

18. (Original) A respiratory delivery system, as claimed in Claim 17, wherein a
5 minimum inhalation force of a user is substantially equal in magnitude to said biasing force which is exerted on said baffle by said biasing member.

19. (Original) A respiratory delivery system, as claimed in Claim 18, wherein a normal inhalation force of said user is greater than said minimum inhalation force of said user, and wherein said baffle is displaced toward said user when under effect of said normal inhalation force.

10 20. (Original) A respiratory delivery system, as claimed in Claim 17, wherein said biasing member is a spring.

21. (Original) A respiratory delivery system, as claimed in Claim 1, further comprising at least one airflow monitoring assembly adapted to monitor flow rate data.

22. (Original) A respiratory delivery system, as claimed in Claim 21, wherein said
15 at least one said airflow monitoring assembly is communicatively interconnected with said at least one said airflow regulation assembly, wherein said at least one said airflow monitoring assembly sends signals relating to said flow rate data to said at least one said airflow regulation assembly.

23. (Currently Amended) A respiratory delivery system, as claimed in Claim 22, wherein said at least one said airflow regulation assembly comprises at least one passage adjustor,
20 wherein said at least one said passage adjustor adjusts a size of said ~~at least one said airflow passage~~ in response to said signals.

24-36. Canceled.

37. (New) A respiratory delivery system for at least assisting in introducing a substance to pulmonary tissue, wherein said respiratory delivery system comprises:

at least one airflow inlet;

at least one outlet;

5 an airflow regulation port located between said at least one airflow inlet and said at least one outlet, wherein an inner wall that defines said airflow regulation port comprises an inner diameter that changes over a length of said airflow regulation port;

at least one ejection actuator for discharging said substance; and

at least one baffle movably disposed relative to said inner wall of said airflow
10 regulation port, wherein said baffle is operative to move axially along said length of said airflow regulation port in response to inhalatory forces to alter a spacing between said baffle and said inner wall, and wherein said baffle maintains a substantially constant airflow rate through said airflow regulation port that is substantially independent of a magnitude of said inhalatory forces.

38. (New) A respiratory delivery system, as claimed in Claim 37, wherein said
15 inner diameter of said airflow flow regulation port at least generally converges in a direction of airflow therethrough.

39. (New) A respiratory delivery system, as claimed in Claim 38, wherein said convergence is linear.

40. (New) A respiratory delivery system, as claimed in Claim 37, wherein said
20 baffle comprises a head having an outer periphery that is in a spaced relation to said inner wall of said airflow regulation port.

41. (New) A respiratory delivery system, as claimed in Claim 40, wherein said head defines a surface disposed substantially perpendicularly to a direction of airflow through said airflow regulation port.

42. (New) A respiratory delivery system, as claimed in Claim 40, wherein said outer periphery of said head is separated from said inner wall of said airflow regulation port by a first distance when said baffle is in a first position disposed toward said at least one airflow inlet, and wherein said outer periphery of said baffle is separated from said inner wall of said airflow regulation port by a second distance that is less than said first distance when said baffle in a second position disposed toward said at least one outlet.

43. (New) A respiratory delivery system, as claimed in Claim 37, wherein a first position of said baffle in response to a first inhalation force is defined by said baffle being separated from said at least one outlet by a first distance, and wherein a second position of said baffle in response to a second inhalation force that is greater than said first inhalation force is defined by said baffle being separated from said at least one outlet by a second distance that is less than said first distance.

44. (New) A respiratory delivery system, as claimed in Claim 37, wherein said baffle is movably supported relative to said airflow regulation port at least in part by a biasing member that biases said baffle in a direction of said at least one airflow inlet.

45. (New) A respiratory delivery system for at least assisting in introducing a substance to pulmonary tissue, wherein said respiratory delivery system comprises:

at least one airflow inlet;

at least one outlet;

5 at least one airflow passage extending between said at least one airflow inlet and said at least one outlet;

a liquid medicament container;

at least one droplet ejection assembly fluidly interconnected to said liquid medicament container, wherein said droplet ejection assembly comprises a plurality of droplet
10 ejection orifices and a plurality of droplet ejection actuators which are independently actuatable to dispense droplets through a corresponding said droplet ejection orifice; and

at least one airflow regulation assembly adapted to adjust a size of an airflow regulation port through which airflow is directed to achieve a substantially constant airflow rate through said airflow regulation port that is substantially independent of a magnitude of an inhalation.

15 46. (New) A respiratory delivery system, as claimed in Claim 45, wherein an inside diameter of said airflow regulation port at least generally converges over the length of said airflow regulation port, wherein a diameter of an inlet of said airflow regulation port is greater than a diameter of an outlet of said airflow regulation port.

47. (New) A respiratory delivery system, as claimed in Claim 45, wherein said at
20 least one airflow regulation assembly comprises:

at least one baffle movably disposed relative to said airflow regulation port, wherein said baffle is operative to move relative to said airflow regulation port in response to inhalatory forces passing through said airflow regulation port to alter a size of said airflow regulation port

through which said airflow may pass.

48. (New) A respiratory delivery system, as claimed in Claim 45, wherein said baffle is movably disposed within said airflow regulation port and a perimeter of said baffle is in a spaced relation to an inner wall that defines said airflow regulation port.

5 49. (New) A respiratory delivery system, as claimed in Claim 48, wherein said baffle is adapted to move axially along a length of said airflow regulation port in response to said magnitude of said inhalation.